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A25642

2. Patent application number
(The Patent Office)

9906830.6

24 MAR 1999

3. Full name of the or of each applicant (underline all surnames)

BRITISH TELECOMMUNICATIONS public limited company
81 NEWGATE STREET
LONDON, EC1A 7AJ, England
Registered in England: 1800000

Patents ADP number (if you know it)

1867002

If the applicant is a corporate body, give the country/state of its incorporation

UNITED KINGDOM

4. Title of the invention

COMMUNICATIONS SYSTEM

5. Name of your agent (if you have one)

WELLS, David

"Address for Service" in the United Kingdom to which all correspondence should be sent (including the postcode)

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INTELLECTUAL PROPERTY DEPARTMENT
HOLBORN CENTRE
120 HOLBORN
LONDON, EC1N 2TE

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Country

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Number of earlier application

Date of filing
(day/month/year)

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Abstract **1**

Drawing(s) **6**

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24 March 1999

WELL, David,

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Lisa Colton

0171 492 8146

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COMMUNICATIONS SYSTEM

The present invention relates to a communications system, and in particular to a system designed to deliver an audio commentary, for example to visitors to a
5 tourist attraction such as an historic building or a gallery.

It is common practice, at some tourist attractions, to provide visitors with a portable cassette player and a tape carrying a pre-recorded commentary. However, this imposes additional overheads on the site operator, and is not feasible for sites where visitors may be too small in number to justify the investment in equipment or
10 staff.

According to a first aspect of the present invention there is provided a method of distributing an audio commentary for a site comprising:

loading the commentary on a telephony voice announcement platform remote from the site;
15 displaying at the site a telephone number for accessing the said commentary;
in response to a call from a mobile handset to the said telephone number, establishing a connection to the telephony voice announcement platform and playing the audio commentary.

The present invention provides a method of delivering an audio commentary
20 that removes entirely from the site operator the need to invest in and manage appropriate equipment. Instead the delivery of the commentary is provided as a service by a telephony network operator, or by a service provider connected to a telephony network. The service can be provided using the existing telephony infrastructure, and potentially with the resources of a single voice announcement
25 platform being shared between a number of sites.

Preferably the method includes loading a plurality of different commentaries corresponding to different respective sites on the voice announcement platform and playing a commentary selected depending on the number dialled by the user.

Preferably the method includes assigning a short dialling code to the
30 commentary and establishing the connection in response to the said short code.

This preferred feature enhances the ease of use of the system by providing a short code to be dialled by the visitor. The short codes may be programmed remotely by the service provider or network operator.

Preferably the method further includes playing a first portion of commentary, and subsequently, in response to a signal generated by the mobile handset, playing a further portion of commentary. Preferably the signal is a DTMF (dual tone multi frequency) tone.

5 This preferred feature gives the user additional control over the delivery of the commentary and can be used, for example, to provide separate commentaries for successive rooms of a building, or for different exhibits in a gallery. This control may be extended, for example, to allow the user to stop, rewind or fast forward the commentary.

10 Systems embodying the present invention will now be described in further detail, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 is a diagram showing schematically a system embodying the present invention;

15 Figure 2 shows an implementation of the system of Figure 1 in a network employing an IN (intelligent network) architecture;

Figure 3 shows an implementation of the system of Figure 1 using a switch-based voice announcement platform;

Figure 4 is a flow diagram showing the operation of the system of Figure 2;

20 Figure 5 is a flow diagram showing the operation of the system of Figure 3;

Figure 6 shows schematically a system using a PABX (private branch exchange).

25 As shown in Figure 1, a visitor to a site of interest uses a mobile telephone 1 to call a number 2a displayed in association with the site. The number might be shown, for example on a sign at the site, or in a map or guide book for the site. The call is connected through a cellular mobile network in a conventional fashion. The call is routed from a base station BS1 in the relevant cell via the cellular network to a gateway 3 to the public switched telephony network (PSTN). A circuit is established via a PSTN switch 4 to a voice announcement platform (VAN) 5. Suitable voice announcement platforms are available commercially from a number of manufacturers. For example, in the case of an implementation using an IN architecture, an Alcatel

30

1410 Intelligent Peripheral voice server may be used. In a switch based implementation, an Alcatel 1411 Digital Announcement Machine (DAM) may be used. The voice announcement platform is pre-programmed with digitised audio recordings of commentaries describing a number of sights. For example, commentary 1 is a description of the architecture and history of a church at the site associated with number 2a, and commentary 2 is a description of another site having a different number 2b associated with it. In this example, the dialled number is forwarded to the voice announcement platform and is used in the platform to address a look-up table which correlates different called numbers and different commentaries. The audio data for the respective commentary, in this case commentary 1, is then played via the telephony network to the user.

Figure 2 illustrates a first implementation of the invention in a network employing an IN (intelligent network) architecture. In this case the PSTN switch 4 of Figure 1 is an IN Service Switching Point (SSP) arranged to implement a Service Switching Function (SSF). When a detection point at the SSP is triggered, for example as a result of the dialling of particular numbers such as the number of the voice announcement, the SSP suspends the basic switching function and communicates with a service control point (SCP) 22 that implements service control functions (SCF). The SCP 22 uses an Intelligent Peripheral (IP), in this case the voice announcement platform, to implement the special resource functions necessary to play announcements to the user and to respond to DTMF tones from the user.

Figure 4 is a flow diagram illustrating the operation of the system of Figure 2. In step 4.1 a call is made by the user. This may be from another network, in which case the trigger is an Initial and Final Address Message received at the SSP. In response (4.2), the switch sends an INAP (Intelligent Network Application Protocol) IDP (initial detection point) message containing the called and/or calling party numbers to the SCP. In step 4.3 the SCP addresses the look-up table to determine from the data in the IDP the identity of the appropriate announcement. A connection is established to the intelligent peripheral (step 4.4) and the announcement is played (steps 4.5 and 4.6). The process may then be terminated by the user hanging up. Alternatively, after playing the first announcement the IP and SCP may continue to wait for a further signal, in the form of a DTMF tone from the user. When this is received in step 4.7, the IP returns a signal to the SCP (step 4.8). The service logic

in the SCP may be programmed to play a further announcement, or to carry out other functions, such as pausing a commentary, or rewinding and replaying a commentary that has previously been played. These options may be identified to the user as a menu of options , e.g. "dial *1 to pause, *2 to rewind, *3 to step to next
5 commentary" , at the beginning of the initial commentary.

Figure 3 illustrates a second embodiment of the invention using a voice announcement platform 32 implemented at a network switch 31. In use, this system dispenses with the INAP SSP to SCP and SCP to IP signalling of the first embodiment, but is otherwise similar in approach.

10 Figure 5 is a flow diagram illustrating the operation of the embodiment of Figure 3. In step 5.1 a call is made, either directly via an access network connected to the switch, or from another network. In this latter case an IFAM (initial and final address message) is passed to the switch. In step 5.2 the call is connected to the voice announcement system at the switch. The called party number received at the
15 switch in the network setup signalling for the call is used to address a look-up table to determine the appropriate commentary in step 5.3. In step 5.4 the commentary is played to the user via the telephone network. The call may then be ended, or further commentaries may be played in response to DTMF control signals from the user (steps 5.5-5.6)

20 Although in the examples so far described, the information provided to the user has been in the form of a voice commentary only, in some implementations the audio data may be supplemented, for example, by web pages or other visual data. Also, the invention is not limited to use with cellular mobile networks. Figure 6 shows a further embodiment, in which the handsets are cordless telephones,
25 conforming to the DECT (Digital Enhanced Cordless Telecommunications) standard that are used in conjunction with a fixed line PABX. In this example, the PABX is programmed to dial the full network number and commentary ID in response to a short dialling code being dialled by the user of one of the handsets. In other implementations, such as those described above with respect
30 to Figures 1 and 2, short code dialling may be implemented as a network-based function.

Any of the systems described above may be used to implement more complex services based on the replay of commentaries. For example, the

commentary might provide instructions for a guided tour, with each section of commentary concluding with directions to the next site, or to a different part of the present site, together with an instruction to signal to the platform , e.g. with a DTMF tone, when the user reaches the next location. The paths for different users may be

5 altered dynamically under the control of the service logic in order to control the flow of visitors around a site. This flow control module may be implemented, for example, as a service control function module such as that shown in dashed lines in Figure 2. This runs on a processor forming part of the SCP. For example, in a room with exits to the west and to the east, the default instruction might ask the user to proceed to

10 the east. A count is maintained at the service platform of the number of users having been instructed to proceed to the east. If a threshold is reached such that overcrowding is likely to occur in the room to the east, then a subsequent user on reaching the end of the commentary for the room, is asked to go to the west. The service logic may cause a choice between two different fixed pre-recorded

15 commentaries to be made at this point, one commentary for a route via the east room, another for a tour via the west room. Alternatively, or in addition, the instructions may be generated dynamically, for example using speech synthesis systems provided within the VAN platform.

CLAIMS

1. A method of distributing an audio commentary for a site comprising:
loading the commentary on a telephony voice announcement platform remote
5 from the site;
displaying at the site a telephone number for accessing the said commentary;
in response to a call from a mobile handset to the said telephone number,
establishing a connection to the telephony voice announcement platform and playing
the audio commentary.
10
2. A method according to claim 1, including loading a plurality of different
commentaries corresponding to different respective sites on the voice
announcement platform and playing a commentary selected depending on the
number dialled by the user.
15
3. A method according to claim 1 or 2, including assigning a short dialling code to
the commentary and establishing the connection in response to the said short code
4. A method according to any one of the preceding claims, further comprising
20 playing a first portion of commentary, and subsequently, in response to a signal
generated by the mobile handset, playing a further portion of commentary.
5. A method according to claim 4, in which the signal is a DTMF (dual tone multi
frequency) tone.
25
6. A method according to any one of the preceding claims, including pausing the
playback of the commentary in response to a signal generated by the mobile
handset.
- 30 7. A method according to any one of the preceding claims including communicating
to the mobile handset instructions for proceeding to a further location.

7

8. A method according to claim 7, including communicating different instructions to different users, thereby controlling the distribution of users between locations.

ABSTRACT
Communications System

An audio commentary, for example for a tourist site, is distributed by loading the
5 commentary on a telephony voice announcement platform remote from the site, and
subsequently playing the commentary to the user via a mobile telephone handset.
Different commentaries may be stored on the platform, and an appropriate one of the
commentaries selected depending on the number dialled by the user.

10 Figure 1

Figure 1

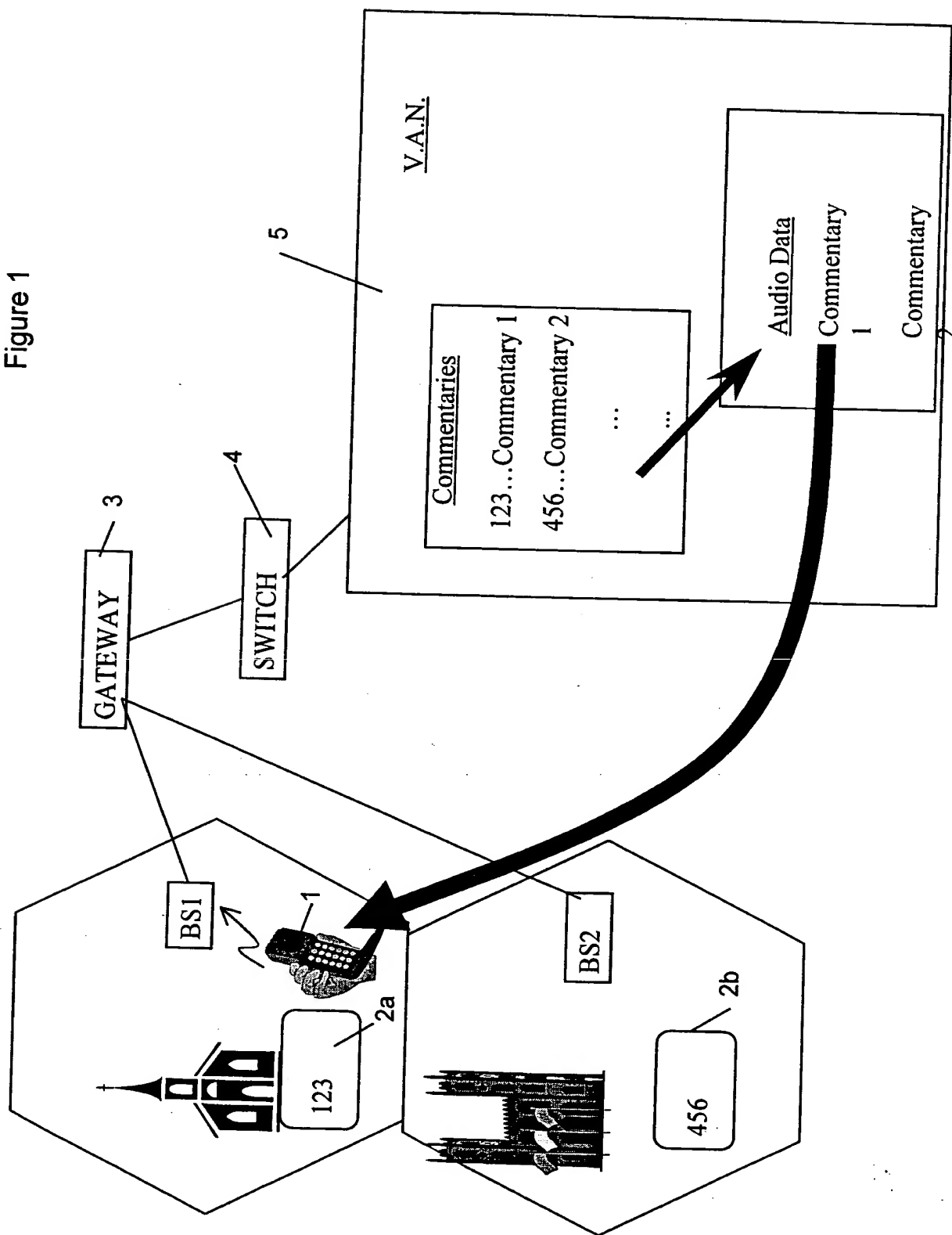


Figure 2

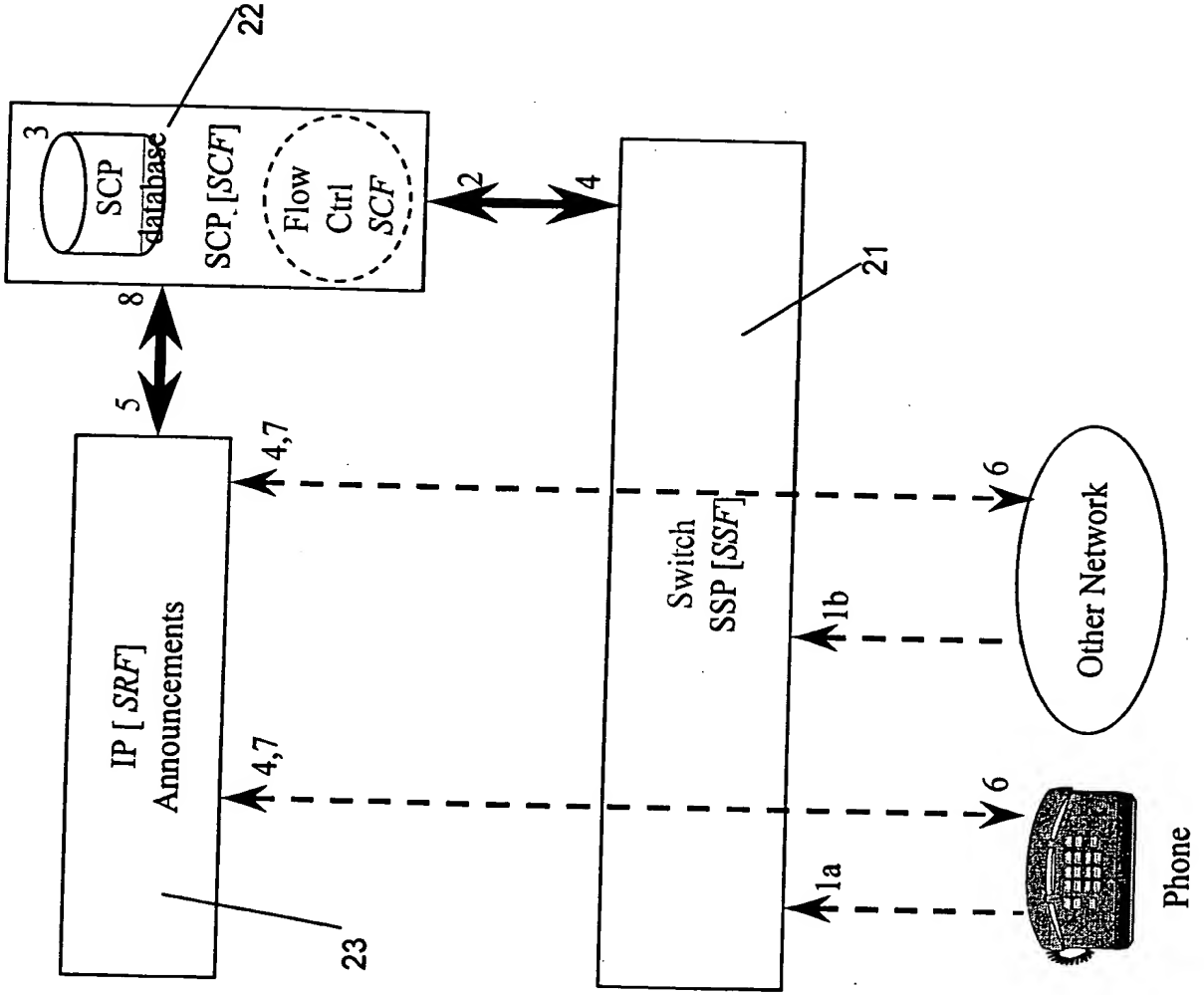


Figure 3

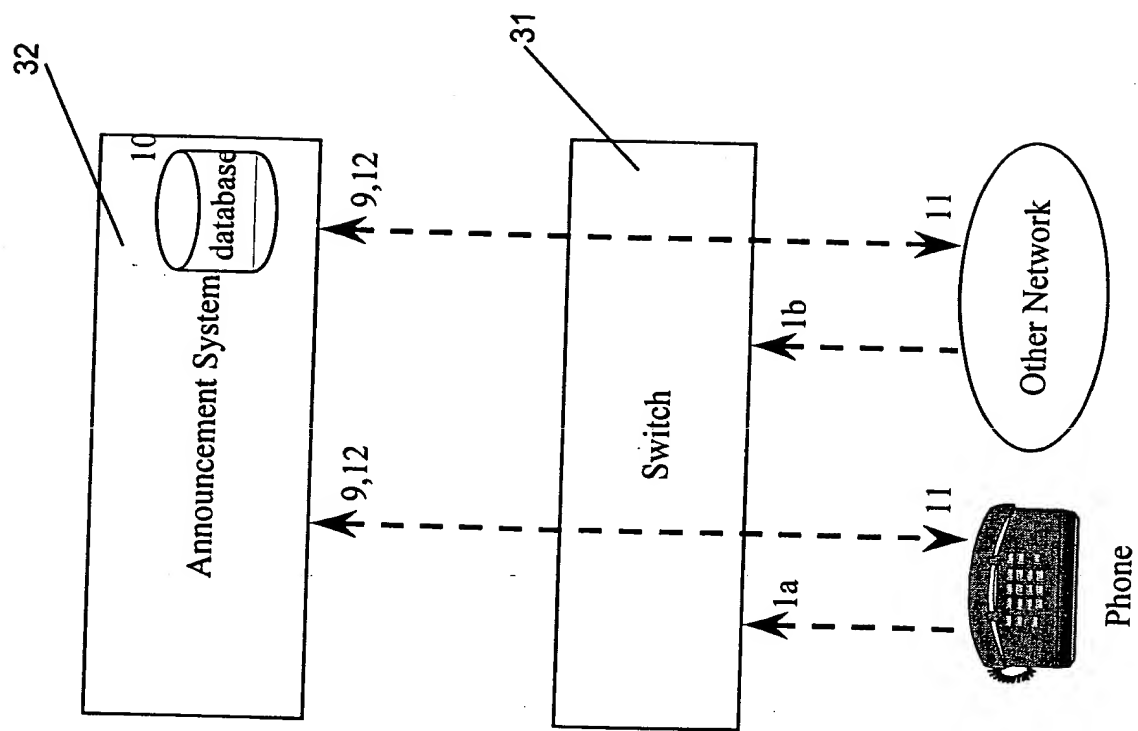
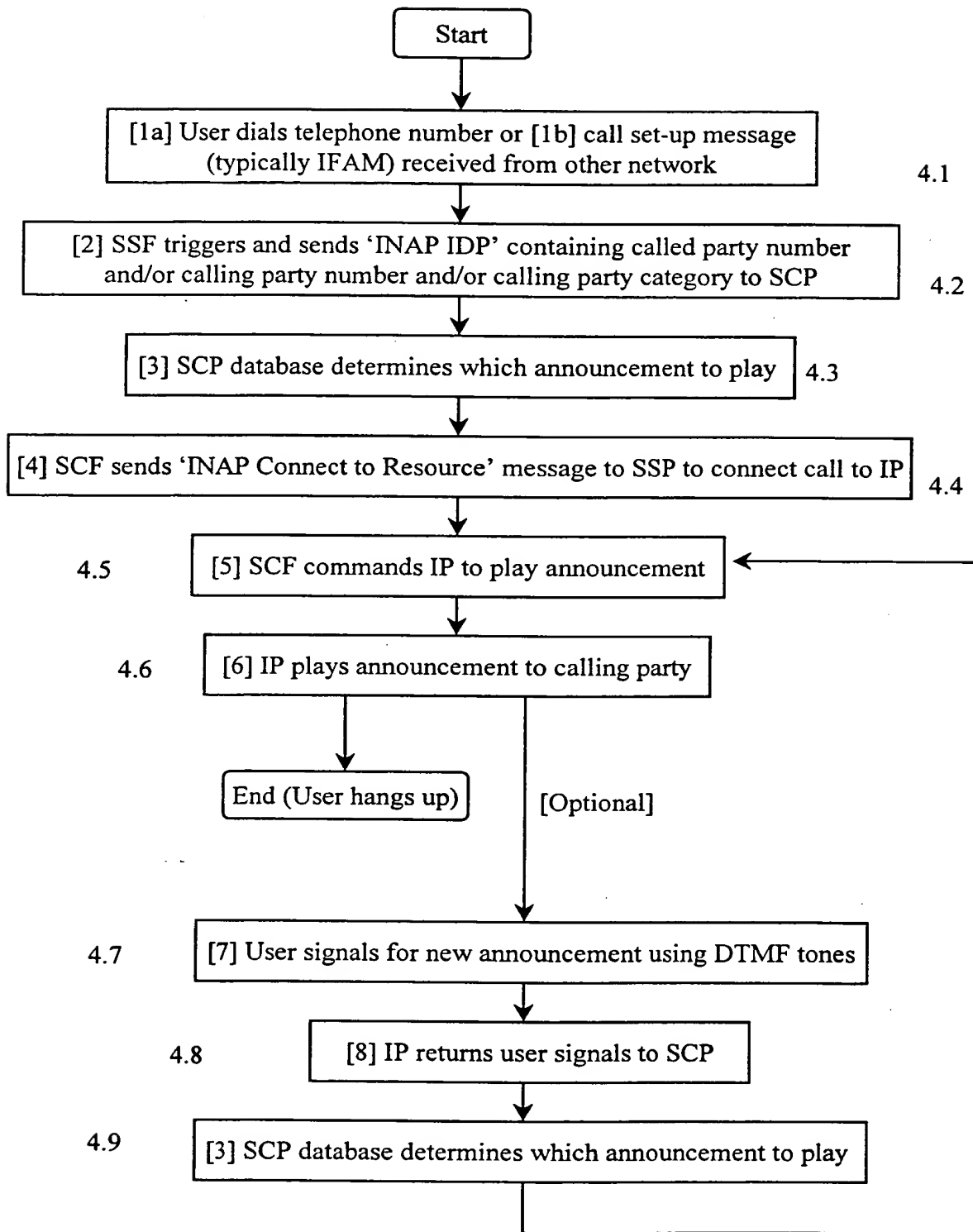


Figure 4



WYS Announcements

Figure 5

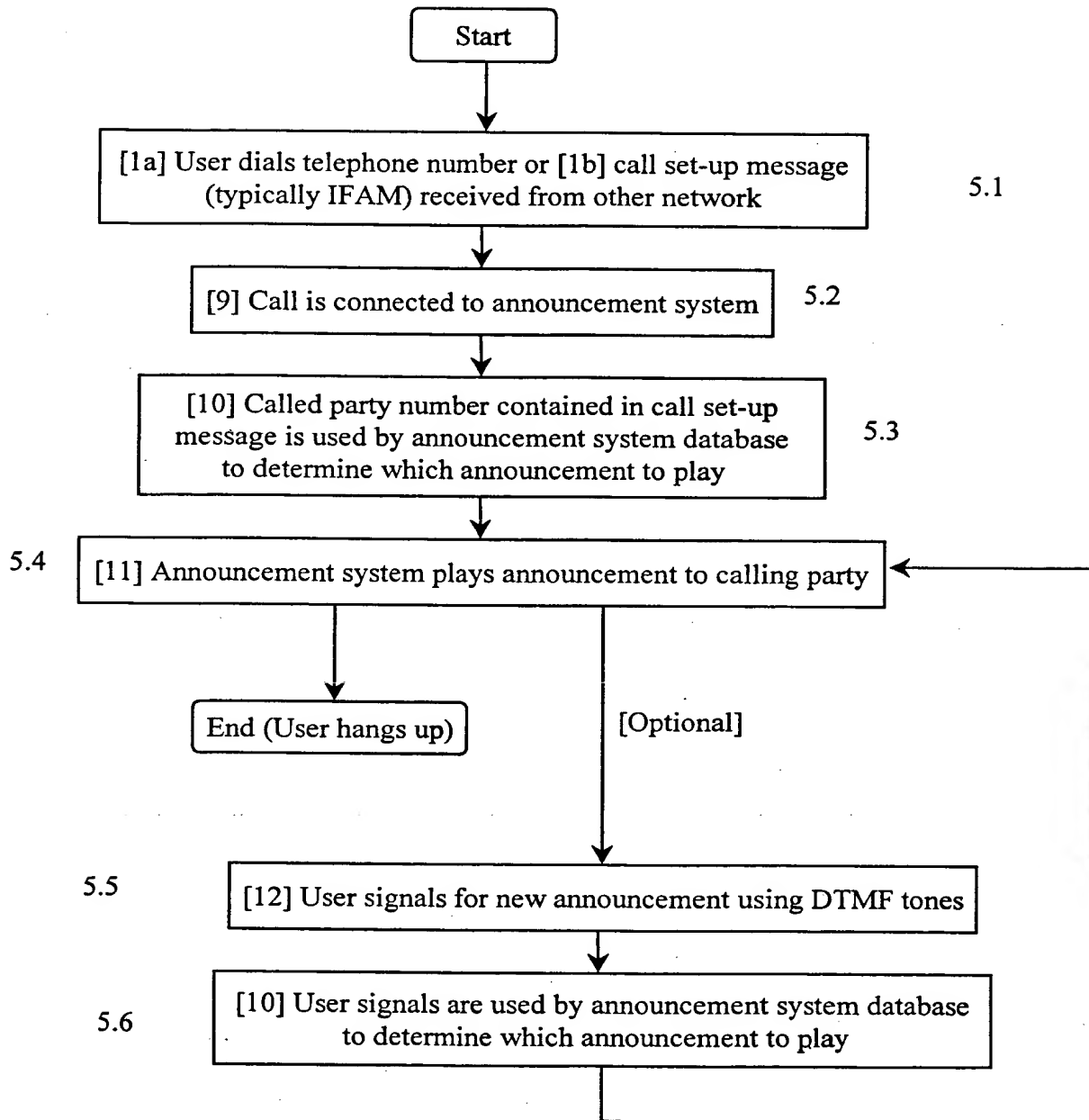
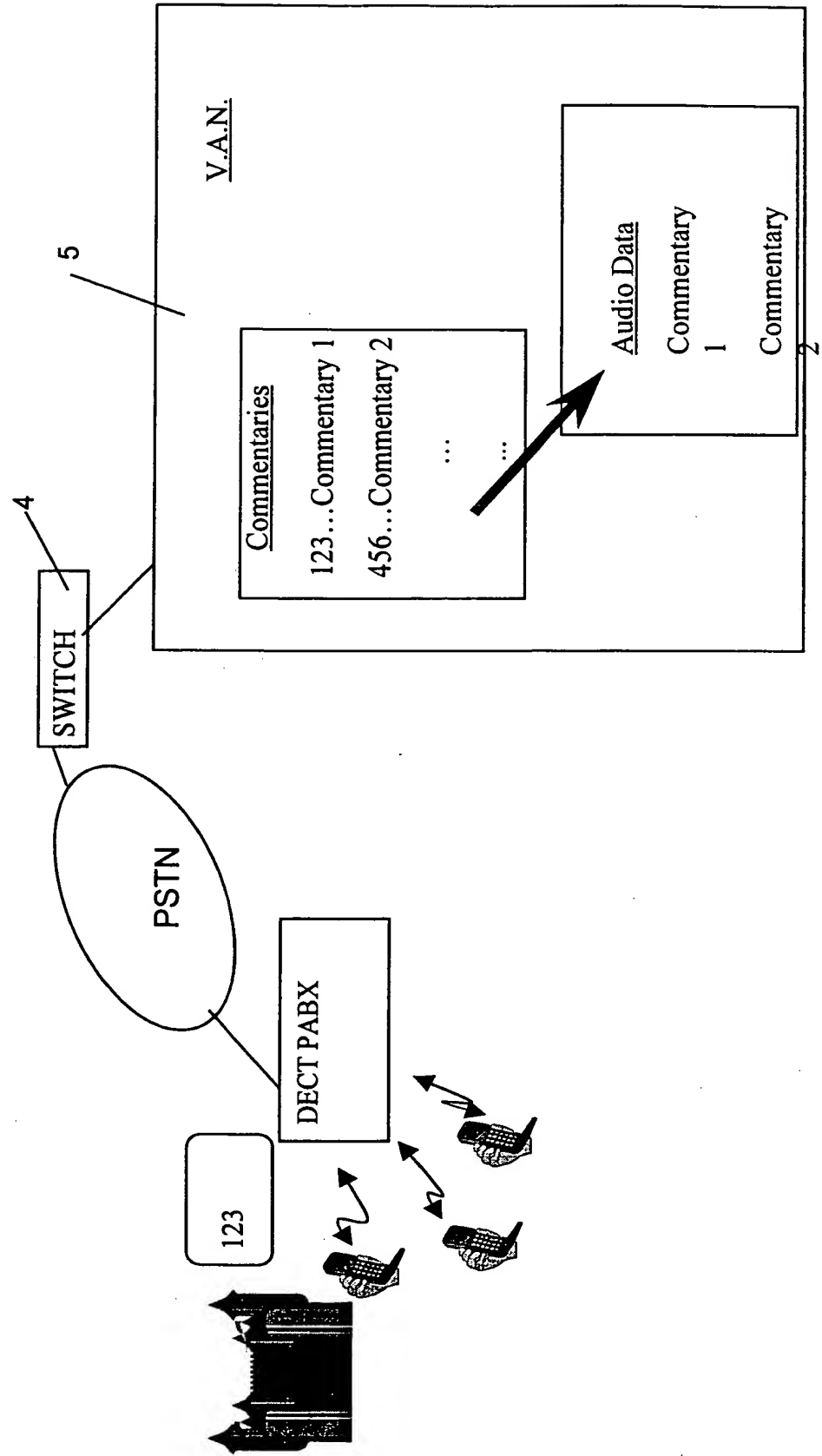


Figure 6



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